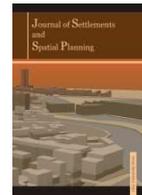




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# Villages on the Edge of Extinction - the Hungarian Situation

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## ABSTRACT

Urbanization trends in Hungary have been similar during the last decades to those of other Central and Eastern European countries. After 40-50 years of mass-urbanization the phase of suburbanization started. We could see out-migration from villages, especially from small ones. Because of this large-scale out-migration the residual population of these villages became older, so we can see that out-migration and natural decrease are parallel nowadays. In some cases the population decline of these small villages became critical; the population of more than 40 villages in Hungary is less than 25, according to the census of 2011. Because of the changing administrative structure, we can see those villages which were independent administrative units by the 1910 Hungarian Census irrespectively of these villages are administrative units (some of the Hungarian small villages) or not (the other part of Hungarian villages) nowadays. The area of investigation is Hungary. We could have a look at the ways and the types of decline by the reason of underpopulation, by clusters of population change and by size of these settlements. Most of the villages had steep decline of population during the last century, but in some of them we could see that the trends are changing. Because of the natural increase and the new functions (eco-village, tourism, suburbanization, counter-urbanization), the population is stable or increasing now. By the clusters of these villages we could create clear types of small villages and their geographic distribution is also understandable.

## 1. INTRODUCTION

One of the most interesting settlement types in Hungary is the small village, that is the village with less than 500 inhabitants. One third of the Hungarian settlements are small villages, but they include only 3% of the total population. Their disadvantageous situation is well-known because of the lack of public services, low-quality infrastructure, poor traffic connections, and old or deprived and declining population. The smaller a village is the worse its situation becomes. Because of these unfavourable processes, some of the Hungarian villages are today at the edge of extinction. However, some of these villages have been refurbished in the last two decades with new functions (tourism, suburbanization, eco-village). Therefore, we argue that while some villages are in a very disadvantaged position other villages are in much better situation today. First

we summarize those factors, which determine the past and present situation and development of small villages in Hungary. Then we try to classify the Hungarian extremely small villages by population changing trends and analysing the geographic location of these groups to find the different ways of development of small villages nowadays. The future of the extremely small villages is not pre-determined; rather their future evolution will depend on their location, functions, local elite, ethnicity, etc.

## 2. THEORY AND METHODOLOGY

### 2.1. A general view of small villages

In the Hungarian settlement geography we use the term 'small village' for the villages with less than 500 inhabitants [1], [2], [3], [4]. In Hungary one third

of all settlements are small villages. The small villages form complex areas, representing altogether 8% of the total territory of Hungary. On the other hand, in Hungary less than 3% of the total population lives in small villages. Small villages can be found especially in the regions where the number of other low populated villages is significant, that is especially in Western and Southern Transdanubia and in the Northern Hungarian counties. This fact highlights the possible extension areas. It may also prove that the increase in the number of these villages has been caused by the decrease of population of villages between 500 and 1000 inhabitants. We can find most of the small villages in West Hungary (Vas and Zala counties), Southwest Hungary (Baranya and Somogy counties) and North Hungary (Borsod-Abaúj-Zemplén and Szabolcs-Szatmár-Bereg counties). When examining the state of supply, transport, economy, jobs and age-structure, it could be argued that most of these villages are in a disadvantaged situation. As the number of small villages has been constantly increasing for decades, the number of geographical researches in this field has been growing as well, not only in Hungary but also in other post-socialist countries. A number of these studies called attention to the negative consequences of the former state development policy [5], [6], [7], [8]. Several other studies were conducted about unfavourable demographic processes [1], [9], [10], and depopulation in Hungary and other Central and Eastern European countries [11], [12], [13]. Further, a lot of studies were carried out about the types of settlements in general [4], [14], [15], and the differentiation process of villages using quantitative methods [16], [17], [18]. Previous studies also highlighted the local social problems [3], [19], [20], [21], [22], the negative features of social, institutional [23], [24], [25] and traffic systems [26], or the disadvantageous situation all together [6], [27], [28]. The political regime change had a great effect on the villages due to the economic changes like unemployment [29], [30], relationship of settlements [8], [31] and the decreasing importance of agriculture [32], [33]. Finally, a great number of publications examined the functions of local authorities and tourism in small villages [34], [35], [36].

Most of the studies deal with small villages as a homogeneous group. But this group of settlements has never been homogeneous [2], [37], [38]. The extent of difference has changed a lot during its short history and the importance and order of the factors that caused changes, too. In the 1950s and 1960s the basis of difference was the economic function, however in the 1970s and 1980s it depended on the measurement of settlements and other joint factors like fundamental provision and advanced stage. After the political regime change lots of areas of society and economy have changed, forming consequently the spatial and settlement structures. It means that the geographical

location has become more important than the measurement of settlements. The inducing factors of the increasing inequalities among settlements were the following: general recession of economy, increasing unemployment and inactive households, changes in the job market and the emergence of new forms of poverty [39], [40].

## **2.2. The evolution of small villages over the last few decades**

Before giving an illustration about results of these studies, it's necessary to look into the recent history of small villages, with special regards to development policy, economy and life conditions. It is well-known that small villages have been the most disadvantageous elements of the Hungarian settlement system during the last fifty years [10], [14], [21]. Their unfavourable situation has originated not only from their measurement, but also from their negative discrimination by the development policy. The socialist village model of the fifties in Hungary classified them as non-viable settlements and later, in 1971, the National Settlement Network Development Concept essentially labelled small villages as "settlements without functions". Moreover, municipal action plans referred to small villages as a category of settlements either disappearing or to be phased out. Bordering small villages had been organized to collective councils in Hungary, and had been decreasing their sources of income continuously. In Hungary in 1985, parliamentary decision stopped the functional distinction of settlements. The finances were to be more proportionately distributed between towns and villages. The first collectivization of agriculture came to light in 1948-1949 in Hungary. Consequently, the agricultural workers and the unproductive small landowners became collective farmers at first [8].

The average territories and livestock of collective farms were very small. In the 1960s the most important process in agriculture was the reorganization of large-scale production and the strengthening of farming, so large number of former agricultural workers left the villages. In the 1970s agriculture recorded the most dynamic growth. Wages in this sector grew during the next decade. Some rural development was continuing after the war. Life conditions and infrastructural conditions (electrification, road-building, culture centre and library-building, etc.) were getting better in the 1960s in Hungary. During the next years in Hungary, household plots were used for subsistence, while the rural population commuted to urban settlements for salaried work. By the 1970s, rural incomes almost matched those in urban areas thanks to the growth of the agricultural sector. But, by the mid 1980s conditions for small villages became intolerable, and many were on the verge of physical disintegration.

The economic problems of Hungary (running into debt, over-employment, faulty economic policy, crisis of agriculture) had all risen to the surface.

The change of the economic and political system introduced a local governmental system with great freedom of decision at the municipal level in Hungary. In the euphoria of the regime change everybody expected rapid and positive changes. However, the socialist agriculture collapsed and many commuter workers lost their jobs due to the crisis also affecting the manufacturing industry. Many rural inhabitants sank into poverty. Public institutions were forced to scale down on the basic services. Nowadays, the local economic power of small villages is insignificant; their regional integrative and contact-making ability is also moderate. So, in reality, small villages are rather the losers than the winners of transition [41], [42].

Similar urbanization trends are visible in other countries in Central Europe. Because of the small population, the infrastructure tends to be underdeveloped in the small villages. This has led to a rapid out-migration of rural population after 1945. Most villages are characterized today by declining functions, older population, lack of jobs and inadequate transport conditions. The situation in the smallest villages is the worst. These problems are not peculiar to Hungary; the situation is very similar in other Eastern and Southern European countries [12], [43], [44], [45]. Often under population is critical as villages could die out in time [46], [47].

There are great regional differences in the development of small villages in Hungary. The most developed small villages can be found near Lake Balaton where they can make profit from tourism and in the more prosperous Middle- and West Transdanubia where the job market and salary conditions are excellent. There is another group of settlements, namely the ones that lie near big cities and consequently they are geographically easily accessible. These are becoming suburban settlements.

The least prosperous 20 small villages can be found in Borsod-Abaúj-Zemplén and Baranya counties. They are of two main types: 1) the least populated, with an aging population (these villages have the worst values in all the indexes) and 2) the gradually rejuvenating settlements where the most of the young population belong to a gipsy community [48]. Their local governments face numerous problems. Most of their budget is spent on social benefits and institutional costs, and they can only rely on financial support from the state [2], [14].

### 2.3. Methods

The local administrative structure of Hungary is special. In Hungary, usually all the settlements

(towns and villages) are administrative units. On the other hand, in Hungary within an administrative unit we have population data of the core settlement (village or town), other inner parts and the outskirts. Other inner parts are usually those small villages, which were sometimes administrative units before, but joined to a larger settlement. Anyway more than 80% of the administrative units in Hungary in the early years of the 20<sup>th</sup> century were still administrative units [49].

As a common base for the research we chose the settlement system of Hungary at the time of the census of 1910. We included those settlements (villages) which were administrative units at the time of the 1920 census in Hungary, regardless of their status today. Therefore, the area of our research is the whole territory of Hungary. Altogether we had 3453 settlements. We used the population data of settlements by the census in 1910, 1920, 1930, 1941, 1949, 1960, 1970, 1980, 1990, 2001 and 2011. We used the demographic data and also websites, literature and carried out some fieldwork. Of special interest for us were those villages with less than 25 inhabitants. For better understanding we compared these extremely small settlements (under 25 inhabitants) with those villages which have a population of less than 250.

In order to compare the settlements, we run a cluster analysis of population changes for the smallest settlements in Hungary between the censuses mentioned above. Using cluster analysis to specify village types is relatively common, but most of these analyses generally employ social and economic indicators [2], [16], [17], [18]. We used the population change data of villages between 1910-1949, 1949-1970, 1970-1990 and 1990-2011 to classify the villages, which is a novel idea. We gathered all the data for the 652 settlements with population less than 250 between 1910 and 2011. We used SPSS 20 and Mapinfo 10.5 in this part of the research.

## 3. RESULTS AND DISCUSSION

### 3.1. Number and population change of the smallest villages in Hungary

There are 652 villages in Hungary where the population dropped under 250 inhabitants sometimes during the 20<sup>th</sup> or the 21<sup>st</sup> century, including 41 where it dropped under 25 (Table 1).

Among them there are four special villages, where the population has actually increased over the last two decades, and their population exceeds now 25 inhabitants. The multiplying number of very small villages is also common in other regions of Central-Europe [51].

In Hungary most of these villages (under 25) are in the counties of Zala (11), Baranya (11), Borsod-Abaúj-Zemplén (7) and Vas (4) (Table 2).

Table 1. Number of villages recording a population of less than 25 individuals during the 20<sup>th</sup> century in Hungary.

Census	Nr. of villages
1949	1
1960	1
1970	2
1980	12
1990	23
2001	29
2011	37

Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50].

Table 2. Number of villages recording a population of less than 25 and 250 individuals during the 20<sup>th</sup> century in Hungary, by counties.

Administrative units	Under 25	Under 250
Baranya	11	154
Bács-Kiskun	0	2
Békés	0	3
Borsod-Abaúj-Zemplén	7	92
Csongrád	0	0
Fejér	1	4
Győr-Moson-Sopron	1	25
Hajdú-Bihar	0	3
Heves	0	4
Jász-Nagykun-Szolnok	0	1
Komárom-Esztergom	0	2
Nógrád	1	21
Pest	0	1
Somogy	0	60
Szabolcs-Szatmár-Bereg	1	17
Tolna	2	16
Vas	4	77
Veszprém	2	52
Zala	11	118
<b>Total</b>	<b>41</b>	<b>652</b>

Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50]

There are almost no such villages in the Hungarian Plain (Bács-Kiskun, Csongrád, Békés, Jász-Nagykun-Szolnok, and Hajdú-Bihar counties) or in Central-Hungary (Pest, Fejér, Heves, and Komárom-Esztergom counties). Most of these extremely small villages are in hilly areas, in the small regions of Órség, Hetés, Göcsej, Zselic, East-Mecsek Hills, Aggtelek-Karszt and Cserehát (Fig. 1). Most of the villages with less than 250 inhabitants have local governments

except for 95 of them which have not. These villages lost the local government function sometime between 1900 and 1990.

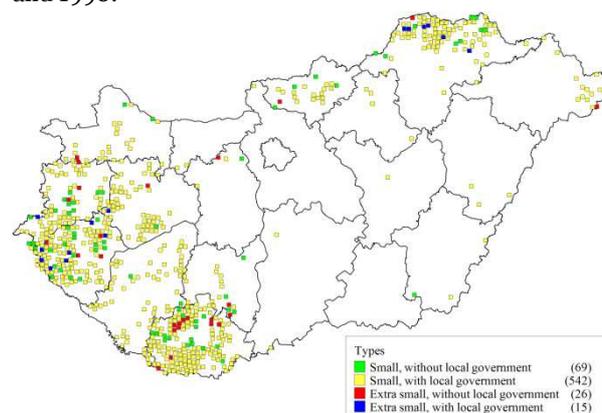


Fig. 1. Settlements recording a population of less than 250 individuals in the 20<sup>th</sup> century in Hungary, by status (small - less than 250 individuals, extra small - less than 25 individuals). Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50].

In 1910 all villages in Hungary had a population greater than 50. The least populated villages in 1910 were Simaháza (Vas) in Hungary with 54 inhabitants, followed by Makkoshetye (Győr-Moson-Sopron, 78). It is interesting that the distance between the two smallest settlements (Simaháza and Makkoshetye) is only 1.3 km. The increase in the number of extremely small villages was slow until the 1970's. At the end of the 1960's there were only two such small villages in Hungary. Because of the mass-urbanization in Hungary the number of the extremely small villages started to grow rapidly in the 1970's (Table 1). At the end of the 1970's there were 12, at the end of 1980's 23, at the end of 20<sup>th</sup> century 29 and in 2011 37 extremely small villages in Hungary. There are 41 villages in Hungary where the minimum population was smaller than 25 between 1910-2011, and 13 (most in Baranya) with the minimum population of less than 10 while six such villages have already died out in Hungary (Table 3). Most of the smallest ones reached the population minimum in 2011, but there are some exceptions. In Hungary the most interesting example is Gyűrűfű with 0 population in 1980 and 1990 and 33 in 2011. But we can see a significant increase of the population in Kisújbánya as well (1980: 3, 1990: 7, 2001: 11, 2011: 17). In Hungary one village died out in the 1940's, three in the 1970's and two in the 1990's.

We can see a sharp decline of the population during the 20<sup>th</sup> century for most of these small villages. Only 11 of them (less than 2%) had a population increase between 1910 and 2011 while 78% of them halved their population. The strongest population decline was between 1970 and 1990, but we can see decline of population during the entire 20<sup>th</sup> century and 21<sup>st</sup> century. After the change of the political regime in

1990 the decline continued, albeit at a slower pace (Fig. 2, Table 4). In order to compare the settlements, we created a cluster analysis using population change between different periods. We did this for the smallest settlements in Hungary and the periods selected are 1910-1949, 1949-1970, 1970-1990 and 1990-2011. These periods represent the main socio-economic eras of Hungary (interwar period, harder and weaker two periods of Communism, and two periods after the change of the political regime (democracy). There is only one village in Cluster 1., Vorhota, a suburban village near Zalaegerszeg, with rapid population increase nowadays. The settlements in Fig. 3 are characterized by similar population change trends between 1990 and 2011 (Table 5). In order to get a better understanding we illustrated the eight clusters in

two separate figures. We can see a population increase or stagnation of the settlements in cluster 1, 2 and 3 during this period. When we look at clusters 2 and 3 we can see large decline of population before 1990. There are some settlements where the population dropped below 25, like Kán, Gyűrűfű, Kisújbánya, Gorica in Baranya county, Zsibrik and Ladomány in Tolna, Nagyéc in Szabolcs and Gosztola in Zala. Most of these settlements do not have local governments yet, except for Gosztola. Gosztola, Zsibrik and Gyűrűfű have seen population increases over the later period. The settlements of cluster 5 are a larger group with moderate decline before 1990 and stagnating population after 1990. We can find these settlements in almost all of the small village regions in Hungary.

Table 3. Villages recording a population of less than 25 inhabitants in the 20<sup>th</sup>-21<sup>st</sup> century in Hungary.

No.	Name of the settlement	Status	County	Population 1910	Population 1949	Population 1970	Population 1990	Population 2001	Population 2011	Change, 1949-1990 (%)	Change, 1990-2011 (%)	Change, 1910-2011 (%)	Cluster
1	Barátság	Part	ZAL	98	106	60	32	17	15	-69.8	-53.1	-84.7	6
2	Csertalakos	Village	ZAL	186	179	136	61	46	24	-65.9	-60.7	-87.1	6
3	Debréte	Village	BAZ	216	220	105	43	30	14	-80.5	-67.4	-93.5	6
4	Derenk	Part	BAZ	373	26	0	0	0	0	-100	N/D	-100	6
5	Dötk	Village	ZAL	170	160	120	41	25	25	-74.4	-39.0	-85.3	6
6	Felsőszenterzseb	Village	ZAL	210	129	57	22	19	16	-82.9	-27.3	-92.4	6
7	Füztű	Part	VAS	159	110	44	22	7	17	-80.0	-22.7	-89.3	6
8	Gagyapáti	Village	BAZ	123	136	71	19	15	16	-86.0	-15.8	-87.0	6
9	Geregye	Part	VAS	150	116	70	24	21	24	-79.3	0.0	-84.0	7
10	Gorica	Part	BAR	234	140	140	4	10	8	-97.1	100	-96.6	3
11	Gosztola	Village	ZAL	157	236	124	19	19	42	-91.9	121.1	-73.2	3
12	Gyűrűfű	Part	BAR	283	253	37	0	26	33	-100	N/D	-88.3	3
13	Iborfia	Village	ZAL	127	161	112	34	20	11	-78.9	-67.6	-91.3	6
14	Iharkút	Part	VES	143	136	111	0	0	0	-100	N/D	-100	6
15	Kán	Part	BAR	422	219	199	6	0	8	-97.3	33.3	-98.1	2
16	Karácodfa	Part	BAR	145	111	86	30	18	12	-73.0	-60.0	-91.7	6
17	Kisújbánya	Part	BAR	314	246	172	7	11	17	-97.2	142.9	-94.6	3
18	Korpád	Part	BAR	204	192	85	6	4	5	-96.9	-16.7	-97.5	6
19	Ladomány	Part	TOL	134	127	81	9	5	14	-92.9	55.6	-89.6	2
20	Lendvajakabfa	Village	ZAL	363	272	151	70	32	22	-74.3	-68.6	-93.9	6
21	Makkoshetye	Part	GMS	78	56	44	27	19	8	-51.8	-70.4	-89.7	6
22	Megyer	Village	VES	172	120	79	57	45	22	-52.5	-61.4	-87.2	6
23	Mónosokor	Part	BAR	364	297	69	5	3	2	-98.3	-60.0	-99.5	6
24	Nagyéc	Part	SSB	663	765	747	4	3	10	-99.5	150	-98.5	3

25	Nagyhorváti	Part	ZAL	158	155	105	51	30	24	-67.1	-52.9	-84.8	6
26	Nemesmedves	Village	VAS	365	196	46	18	21	17	-90.8	-5.6	-95.3	6
27	Pusztakisfalu	Part	BAR	166	146	102	35	35	19	-76.0	-45.7	-88.6	6
28	Pusztaszántó	Part	NOG	176	134	83	21	11	7	-84.3	-66.7	-96.0	6
29	Pusztaszentpéter	Part	ZAL	133	63	19	2	2	2	-96.8	0.0	-98.5	6
30	Püspökszentlászló	Part	BAR	107	88	103	43	14	39	-51.1	-9.3	-63.6	5
31	Révfülu	Part	BAR	192	310	94	5	0	0	-98.4	-100	-100	6
32	Sima	Village	BAZ	187	171	78	24	19	21	-86.0	-12.5	-88.8	6
33	Simaháza	Part	VAS	54	45	38	0	0	0	-100	N/D	-100	6
34	Szatina	Part	BAR	204	163	127	46	37	22	-71.8	-52.2	-89.2	6
35	Teresztenye	Village	BAZ	169	148	107	44	26	21	-70.3	-52.3	-87.6	6
36	Tornabarakony	Village	BAZ	266	269	189	54	28	13	-79.9	-75.9	-95.1	6
37	Tornakápolna	Village	BAZ	141	133	113	22	12	11	-83.5	-50.0	-92.2	6
38	Vakola	Part	ZAL	99	94	82	41	27	24	-56.4	-41.5	-75.8	7
39	Vérteskozma	Part	FEJ	463	170	149	28	20	10	-83.5	-64.3	-97.8	6
40	Zalaköveskút	Village	ZAL	155	134	104	47	30	23	-64.9	-51.1	-85.2	6
41	Zsibrik	Part	TOL	340	183	142	19	24	32	-89.6	68.4	-90.6	2

Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50]. BAR: Baranya, BAZ: Borsod-Abaúj-Zemplén, FEJ: Fejér, GMS: Győr-Moson-Sopron, NOG: Nógrád, SSB: Szabolcs-Szatmár-Bereg, TOL: Tolna, VAS: Vas, VES: Veszprém, ZAL: Zala counties, N/D: no data.

Table 4. Population change of villages recording a population of less than 250 individuals in the 20<sup>th</sup>-21<sup>st</sup> century in Hungary by status and periods (small – less than 250 individuals, extra small – less than 25 individuals).

Type	Nr of villages	1910-1949 (%)	1949-1970 (%)	1970-1990 (%)	1990-2011 (%)
Extra small, with local government	15	-11.40	-40.20	-63.90	-48.20
Extra small, without local government	26	-24.00	-32.80	-84.40	-24.60
Small, with local government	542	-1.10	-25.60	-36.70	-23.90
Small, without local government	69	-6.50	-19.20	-37.70	-8.80

Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50]

Table 5. Clusters of villages recording a population of less than 250 individuals in the 20<sup>th</sup>-21<sup>st</sup> century in Hungary by population change.

Cluster	1	2	3	4	5	6	7	8
No. of villages	1	14	6	137	140	85	261	8
1910-1949	▼	▼	▼	▲	0	▼	▼	▲▲
1949-1970	▲	▼	▼	▼	▼	▼	▼	▼
1970-1990	▲▲	▼▼	▼▼	▼	▼	▼▼	▼	▼
1990-2011	▲▲	▲	▲▲	▼	0	▼▼	▼	▼

Legend: ▲ Growth, ▲▲ Extreme growth, ▼ Decline, ▼▼ Extreme decline

■ Critically endangered

Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50].

There are other ways of population change at the other four clusters (Fig. 4). We can see population decline in almost all periods at the settlements of clusters 4, 6, 7 and 8. The exceptions are clusters 4 and 8, where there was a population increase before the WW II. The geographic distribution of these clusters is not special, they are occurring in all small village

regions of Hungary. There are a lot of critically endangered villages in cluster 6, with less than 25 inhabitants, so these villages are at the edge of extinction. The majority of these villages are in Zala (Bödeháza, Kerkakutas, Pusztaszentpéter, Zalaszombatfa) Borsod-Abaúj Zemplén (Égerszög, Gagypáti, Perecse, Teresztenye) and Baranya counties

(Korpád, Mónosokor, Pusztakisfalú, Révfalu). The largest cluster with no spatial concentration is cluster 7.

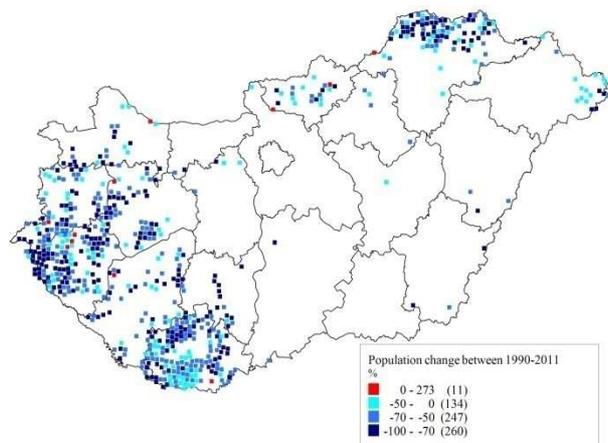


Fig. 2. Population change of settlements recording a population of less than 250 individuals between 1910-2011 in Hungary. Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50].

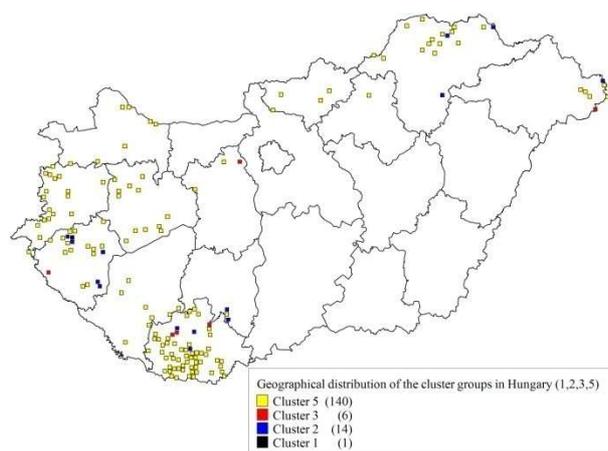


Fig. 3. Clusters of settlements recording a population of less than 250 individuals by population change in Hungary, I. Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50].

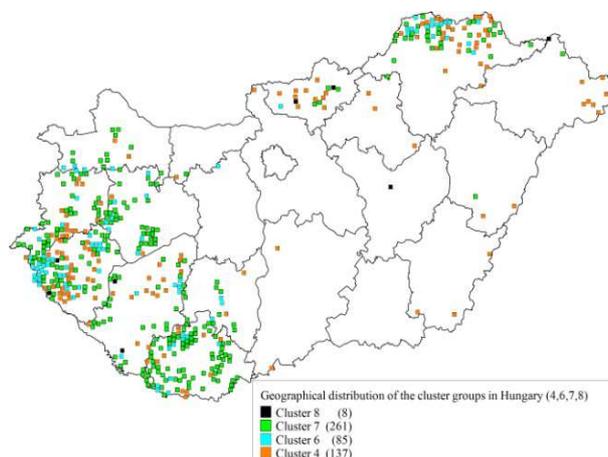


Fig. 4. Clusters of settlements recording a population of less than 250 individuals by population change in Hungary, II. Source: Own calculation based on data provided by KSH (Hungarian Central Statistical Office, HCSO) [50].

### 3.2. Normal and special ways of the small villages

Most of the villages became under populated or almost under populated by the normal or natural way. It means that they were always small and their infrastructure inadequate. They also lacked jobs and underdeveloped transport facilities made commuting difficult. As the population aged, the process of natural population decline started. This process is characteristic to all small villages, but in Hungary it seems that the effects are more visible. There are also some instances in which natural population decline is not the main reason for depopulation. For example, some villages were abandoned after being hit by natural disasters. In 1970, rivers Tisza and Szamos flooded and dozens of villages in north-eastern Hungary were covered by water. Some of these villages were partially or entirely destroyed by this massive flooding. One village, Nagygéc, was not rebuilt and was abandoned by its population [52].

Another reason for population loss in small villages can be industrial activity. For example, within the limits of Iharkút village, in Veszprém county, bauxite was found and an open-field bauxite-mine was opened. The village was in the way, so it was demolished in the 1970's. Under population because of a newly opened mine is not unprecedented in the world [53]. In some cases ethnic out-migration, could lead to depopulation of villages. In Hungary, near the Austrian border there is a small village, Nemesmedves which used to have an ethnic German population. After the Second World War most of its population was expelled and because it was very close to the strictly closed Austrian border, just a few Hungarians moved there. Most of these Hungarian settlers moved out later, so the population now consist of only 20 inhabitants.

The strangest reason leading to village depopulation could be found at a small formerly ethnic Polish village, Derenk, situated in Northern Hungary. Near the village, in the 1940s, the governor of Hungary had a small hunting palace. He wanted to create a bear hunting area, but the village was in the way. Consequently, the village was destroyed and the population settled in different villages nearby and also in the Hungarian Plain. Nobody has lived in Derenk since then. While there are quite a lot of similarities connecting the past of these villages, there can be differences in their future [13]. We can predict three different ways these extremely small villages of Hungary could evolve in the future. The first way is the total physical destruction both in terms of population and in the built environment. Most of those villages, which died out in the early decades (1940s, 1970s, 1980s) are in this category. Sometimes just the churches or belfries remained; almost all the former houses disappeared.

Another possibility is a change of functions. Although villages are depopulated, the buildings have remained in place and could be used as second homes to develop tourism. This is already happening in those villages boasting beautiful buildings, especially those that used to be inhabited by ethnic Germans, like Kisújbánya or Kán [54].

The third possibility is rebuilding the village anew. In this case both the population and the building environment are renewed. The best example for this type is the small village of Gyűrűfű in Baranya County. Gyűrűfű was the first village in Hungary to become depopulated in an organic way in the 1970's. Not only the population dropped to zero, but the whole physical environment disappeared. In the 1990's a new eco-village started to be built there. The village has reached today a population of about 30. Most of the inhabitants came from big cities (Budapest, Pécs) and engaged in eco-agriculture, eco-tourism, using environmentally friendly building materials and sewage and heating systems. All houses in the village are new [55], [56], [57], [58].

#### 4. CONCLUSION

During the 20<sup>th</sup> century the number of extremely small villages increased in Hungary. Because of the mass urbanization and the disadvantaged situation of small villages, the population of some settlements declined dramatically. We could see the fastest population decline in the 1970s and 1980s. After the change of the political regime around 1990 the above-mentioned processes also started to change. Of course, some small villages are still losing population, but other villages found ways to reverse this process. There are different ways for population change and different future paths for the extremely small villages in Hungary. We used the demographic data of all 652 small villages in Hungary collected at the censuses taken between 1910 and 2011. Using the population change trends in different periods and a cluster analysis with these data we could describe the groups of small villages in Hungary. This method was proven adequate, as it allowed us to separate the different ways of transition and to classify the similar villages. The trends are similar to the small villages of nearby countries, characterized by an initial steep decline of population in most of the villages which was stopped in the late decades of the 20<sup>th</sup> century and the early years of the 21st century.

The most important factor that could be decisive in stopping and even reversing population decline is geographic location; some villages situated near cities or larger towns or with touristic facilities are in better situation now. The reason for the population increase can also be the natural increase especially in the villages with large Roma population. On the other

hand, the location is just one factor; there are small villages situated near towns which continue to be affected by population decline and there are also villages situated in peripheral areas yet which have managed to reverse the migratory flows. Despite the disadvantageous processes during the last decades there are very few totally depopulated villages (only 6 in Hungary), a situation that is similar to that of other countries in the region. The smallest villages show the most different ways, in connection with the different local conditions, from the renewing eco-villages and second-home villages to the disadvantaged villages with uninhabitable housing conditions at the edge of extinction.

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